Volunteer Lake Assessment Program Individual Lake Reports

MOORES POND, TAMWORTH, NH

MORPHOMETRIC DATA

Watershed Area (Ac.):	12,224	**Max. Depth (m):**	11.3	**Flushing Rate (yr^{1})**	34
Surface Area (Ac.):	50	**Mean Depth (m):**	4.4	**P Retention Coef:**	0.14
Shore Length (m):	2,600	**Volume (m^{3}):**	886,000	**Elevation (ft):**	440

TROPHIC CLASSIFICATION

Year	Trophic class
1984	MESOTROPHIC
2004	MESOTROPHIC

KNOWN EXOTIC SPECIES

The Waterbody Report Card tables are generated from the DRAFT 2014 305(b) report on the status of N.H. waters, and are based on data collected from 2004-2013. Detailed waterbody assessment and report card information can be found at www.des.nh.gov/organizations/divisions/water/wmb/swqa/index.htm

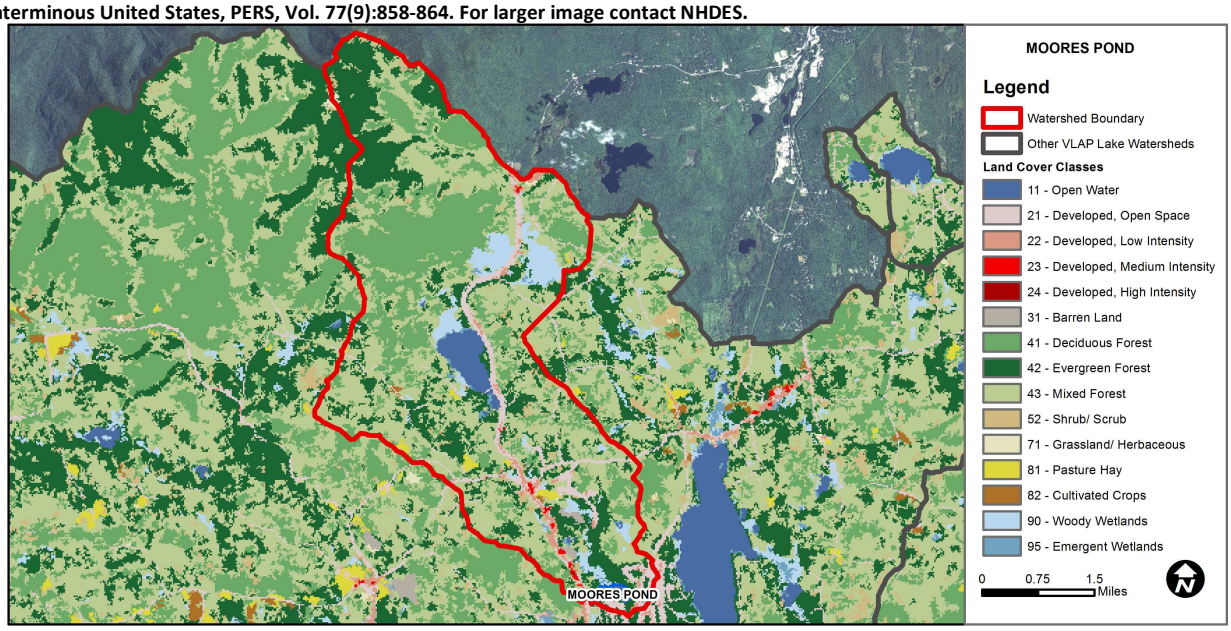
Designated Use	Parameter	Category	Comments
Aquatic Life	Phosphorus (Total)	Good	The calculated median is from 5 or more samples and is < indicator and > 1/2 indicator and the chlorophyll a indicator is okay.
	pH	Slightly Bad	>10% of samples exceed criteria by a small margin (minimum of 2 exceedances).
	Oxygen, Dissolved	Encouraging	There are < 10 samples with 0 exceedances of criteria. More data needed.
	Dissolved oxygen satura	Encouraging	There are < 10 samples with 0 exceedances of criteria. More data needed.
	Chlorophyll-a	Good	The calculated median is from 5 or more samples and is < indicator and > 1/2 indicator.
Primary Contact Recreation	Escherichia coli	Very Good	Where there are no geometric means, all bacteria samples are < 75% of the geometric mean. Where there are geometric means all single bacteria samples are < the SSMC and all geometric means are < geometric mean criteria.
	Chlorophyll-a	Encouraging	There are < 10 samples with 0 exceedances of indicator. More data needed.

BEACH PRIMARY CONTACT ASSESSMENT STATUS

MOORES POND - ASSOCIATION BEACH	Escherichia coli	Good	There are geometric means and all geometric means are < geometric mean criteria; and there has been a single sample exceedance.
MOORES POND - MOORES POND SKI AND BEACH	Escherichia coli	Bad	There are >=1 exceedance(s) of the geometric mean and/or >=2 single sample criterion exceedances. One or more exceedance is >2X criteria.

WATERSHED LAND USE SUMMARY

Fry, J., Xian, G., Jin, S., Dewitz, J., Homer, C., Yang, L., Barnes, C., Herold, N., and Wickham, J., 2011. Completion of the 2006 National Land Cover Database for the Conterminous United States, PERS, Vol. 77(9):858-864. For larger image contact NHDES.



Land Cover Category	% Cover	Land Cover Category	% Cover	Land Cover Category	% Cover
Open Water	2.53	Barren Land	0.31	Grassland/Herbaceous	0.11
Developed-Open Space	4.8	Deciduous Forest	24.4	Pasture Hay	0.55
Developed-Low Intensity	1.29	Evergreen Forest	21.43	Cultivated Crops	0.1
Developed-Medium Intensity	0.21	Mixed Forest	37.58	Woody Wetlands	4.62
Developed-High Intensity	0.02	Shrub-Scrub	1.57	Emergent Wetlands	0.46

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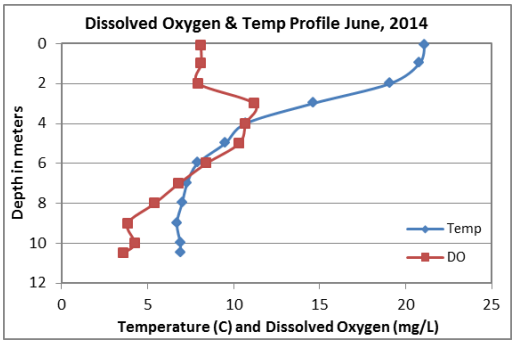
Moores Pond, Tamworth

2014 Data Summary

Observations and Recommendations (*Refer to Table 1 and Historical Deep Spot Data Graphics)*

- **Chlorophyll-a:** Chlorophyll levels were low, decreased slightly from 2013, and were less than the state median in June. Visual inspection of historical data indicates slightly variable chlorophyll levels since monitoring began.
- **Conductivity/Chloride:** Deep spot and Northwest Inlet conductivity and chloride levels were slightly greater than the state median, however they were not above a level of concern. Visual inspection of historical data indicates stable epilimnetic (upper water layer) conductivity since monitoring began.
- **Total Phosphorus:** Epilimnetic and Metalimnetic (middle water layer) phosphorus levels increased slightly from 2013 but remained low and much less than the state median. Visual inspection of historical data indicates slightly variable epilimnetic phosphorus since monitoring began. Hypolimnetic (lower water layer) phosphorus levels were slightly higher but still considered to be within a low range. Northwest Inlet phosphorus levels were low.
- **Transparency:** Transparency was good in 2014 and was the highest (best) recorded since monitoring began, and much better than the state median. Visual inspection of historical data indicates slightly variable transparency since monitoring began.
- **Turbidity:** Deep spot and Northwest Inlet turbidity was low for those stations in 2014.
- **pH:** Epilimnetic pH was within the desirable range 6.5-8.0 units, however Metalimnetic and Hypolimnetic pH levels were less than desirable, and historically, epilimnetic pH has fluctuated below the desirable range. Visual inspection of historical data indicates variable epilimnetic pH.
- **Recommended Actions:** Increase monitoring frequency to once per month during the summer to better assess seasonal water quality and historical water quality trends, and decrease variability within the data. Overall, water quality looks good. However, stormwater runoff from the increased frequency and intensity of storm events may contribute nutrients and sediments to the pond. Educate watershed residents on ways to reduce stormwater runoff from their properties, roads and steep slopes utilizing DES' "NH Homeowner's Guide to Stormwater Management". Keep up the great work!



Station Name	Table 1. 2014 Average Water Quality Data for MOORES POND								
	Alk. mg/l	Chlor-a ug/l	Chloride mg/l	Cond. uS/cm	Total P ug/l	Trans. m		Turb. ntu	pH
						NVS	VS		
Epilimnion	5.30	2.56	11	50.1	6	5.50	5.75	0.60	6.74
Metalimnion				55.1	5			0.63	6.23
Hypolimnion				55.6	9			1.59	6.03
Northwest Inlet				51.7	6			0.51	6.48

NH Median Values: Median values for specific parameters generated from historic lake monitoring data.
Alkalinity: 4.9 mg/L
Chlorophyll-a: 4.58 mg/m^3
Conductivity: 40.0 uS/cm
Chloride: 4 mg/L
Total Phosphorus: 12 ug/L
Transparency: 3.2 m
pH: 6.6

NH Water Quality Standards: Numeric criteria for specific parameters. Results exceeding criteria are considered a water quality violation.
Chloride: > 230 mg/L (chronic)
E. coli: > 88 cts/100 mL – public beach
E. coli: > 406 cts/100 mL – surface waters
Turbidity: > 10 NTU above natural level
pH: between 6.5-8.0 (unless naturally occurring)

Historical Water Quality Trend Analysis

Parameter	Trend	Explanation	Parameter	Trend	Explanation
Conductivity	N/A	Ten consecutive years of data necessary for analysis.	Chlorophyll-a	N/A	Ten consecutive years of data necessary for analysis.
pH (epilimnion)	N/A	Ten consecutive years of data necessary for analysis.	Transparency	N/A	Ten consecutive years of data necessary for analysis.
			Phosphorus (epilimnion)	N/A	Ten consecutive years of data necessary for analysis.